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Armed Forces Epidemiology Board

Integrity - Service - Excellence
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Leishmaniasis and the DoD

Operations ENDURING FREEDOM and IRAQI

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Background

- **Leishmaniasis is endemic in Iraq and Afghanistan, both cutaneous and visceral types**
- **Conditions in parts of Iraq are worse than usual**
 - Diversion/drainage of surrounding water created 50km² area of cracked earth breeding ground at Tallil
 - Ground heat prevent penetration by aerial spraying
 - Extensive local reservoirs (rats and canines)
- **Up to 1000 sand flies in outdoor unbaited light traps, up to 10 sand flies per trap in zippered tents w/AC**
 - PCR tests showed 2% sand flies infected with leish
 - Positive mosquito pools at Tallil AB and Baghdad IAP
 - Reports of being “eaten alive” by bugs





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In-theater Evaluation

- **Clinical suspicion**
- **Laboratory testing by experienced infectious disease specialist with Theater Army Medical Lab**
 - 4mm punch biopsy with touch preps
 - PCR with validated genus specific primer/probe set, using a LightCycler® platform
 - Culture (up to 28 days)
- **Air evacuation to WRAMC for treatment**
 - “Confirmatory” testing at WRAMC/WRAIR with PCR using SmartCycler® platform and culture with speciation testing (isoenzyme electrophoresis)





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Two AF Case Studies

- AF male enlisted member, stationed at Tallil AB, arrived 17 Jul, foot lesion dx as cellulitis 14 Aug, dx of cutaneous leish 16 Aug
 - Did not use mosquito netting, occasionally used DEET on skin, did not play outdoor sports
- AF male TSgt, stationed at Al Jaber AB (Kuwait), arrived in theater 14 Jul, two overnights at Tallil AB convoy rest area
 - Slept in sleeping bag in back of truck, took BDU top off, awoke and one arm had multiple bites
 - Multiple lesions reported on 20 Jul





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DoD Experience To Date

- **2 cases from Afghanistan, Jan-May 03, (1 AF, 1 Army)**
- **15 (?) cases from Iraq/Kuwait, Jun 03 onward**
 - **2 AF, 1 Marine, 12 Army**
 - **Incubation period has been relatively short**
 - **Average number of lesions=3-4, max=9**
 - **6 cases were L. major; other results pending or inadequate culture growth to allow speciation**
- **No visceral leish cases identified—so far**
- **All cases returned to WRAMC for Rx w/Pentostam®**
- **Note: 17 cases cutaneous, 11 cases visceral reported after DESERT STORM***

*Ohl, et al. Mil Med. 1993
Nov;158(11):726-9



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Worries

- **Some troops arriving unprepared**
 - Awareness, PPE supplies & training in their use
- **Variable compliance with PPE use in the field**
 - Lack of command emphasis at some sites
- **Variable availability of PPE in the field (AC tents, DEET, area insecticides, etc.)**
- **Limited ability to control the vector**
- **Disease may manifest months/years after redeploy**
 - Civilian physicians seeing Guard/Reserve may not have a low threshold of suspicion
 - Some units telling members to “go get tested”





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Actions Taken

- **Redeployment briefings, handouts, & wallet cards**
- **Army policy for diagnosis and treatment of leish**
- **ID consultant and entomologist placed at Tallil AB**
- **Joint and component messages strengthened reporting requirements and emphasized PPE**
- **OSD/HA issuing medical alert to military/VA**
- **MMWR article to alert civilian MDs**
- **Tailored risk communication products for MDs/troops**
- **Deferring new and recalling blood donations**
 - **For anyone deployed to Iraq between Apr-Nov**

